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Stefano Vegnaduzzo
UCLA

Temmi Szalai
UCLA

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Sequence of Aspects (and Lack thereof) in Naudm

Stefano Vegnaduzzo & Temmi Szalai

UCLA

0. Overview

Naudm (an SVO language of the Niger-Kordofanian family) has a rich system of tense and aspect. Here we will leave aside non-finite forms and focus only on part of the system, namely finite forms in main and embedded clauses. Here is a table of forms to be discussed, together with provisional labels:

Table 1:

1)	ma dʒun I eat-imperfective	I am eating	impf. present (prog. or hab.)
2)	ma deera I eat-perfective	I have eaten	perfective (Engl. pres. perf.)
3)	ma dɛ deera I def-past eat-perfective	I ate	distant perfective past
4)	ma n deera I def-marker eat-perfective	I ate	recent perfective past
5)	ma dɛ dʒun I def-past eat-imperf.	I was eating	distant imperfective past
6)	ma n da: dʒu I def-mk indef-past eat-imp.stem	I was eating	recent imperfective past
7)	ma da: dʒu I indef-past impf.stem	I used to eat	habitual past
8)	ma ba: de I future bare.stem	I will eat	future

A first approximation of a morphological analysis of the forms above is provided below.

dɛ definite (distant) past

n definiteness marker

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Pius Tamanji, Masako Hirotani, and Nacy Hall (eds.), NELS 29: 161-175

da: indefinite past/aspect
dʒu imperfective stem
dʒu-n imperfective stem + imperfective aspect
n imperfective aspect
dee-ra bare stem + perfective aspect
de bare (perfective?) stem

The data in 1 - 8 can be characterized using the following templatic structure.

Subject + (Tense)* + Verbal stem + (Aspect)

Tense is expressed by free morphemes[1] and aspectual morphology attaches to the verbal stem as a suffix. Notice that Naudm verbs have two basic stems[2]. First, there is the imperfective stem, which is the base to which proper imperfective morphology attaches. Additionally, there is a second stem which is indeed the base to which proper perfective morphology is attached.

Our aim here is to provide a phrase structure for tense and aspect in Naudm. To this end, we will investigate the syntactic and semantic properties of tense and aspect in embedded contexts. Further, we will employ standard word-order tests, targeting aspectual adverbs and negation particles in particular.

We will assume as a reference point Cinque's (1997) proposal about the universal hierarchy of functional projections. Cinque's theory makes very strong predictions about what we should and should not expect to find. We will try to verify the extent to which Naudm data fit Cinque's idea. We will consider if and how potential counterexamples can be accommodated within the space allowed by the internal logic of the theory. Cinque's theory does not, however, say anything about tense in embedded contexts. To account for tense data we will adopt a version of Stowell (1993)'s polarity-based theory of tense, with appropriate extensions to aspectual matters as proposed by Demirdache & Uribe-Etxebarria (1998).

1. First tackle on the future: sequence of tenses.

A first broad generalization about Naudm is that it does not have anaphoric-deictic tenses[3]. There is only one form which can have a deictic-anaphoric meaning, namely the future-in-the-past.

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[1] Tense morphemes can be null.

[2] In fact at least two, given that more complicated options are available to express iterativity and distributivity over the object. We will not be concerned with these forms in the this paper.

[3] Specifically, it does not have past participles and apparent auxiliaries. The counterparts of English past and future perfect are expressed by means of a periphrasis with the lexical verb fətəgə "to finish". Notice that the distant perfective past, which would be the natural candidate to express a past perfect meaning (past tense dɛ + perfective morphology) does in fact indicate only a simple deictic past meaning. This

(1) Samba dɛ beda na a dɛ ba: de le.
samba past say-perf that he past fut. eat it
"Samba said that he would eat it."

Future-in-the-past can only be expressed by means of the (optional) ba: morpheme. We provisionally refer to this morpheme as "future".

(2) Samba dɛ beda na a ba: de le.
samba past say-perf that he fut. eat it
"Samba said that he would eat it."

What is remarkable about (2) is that it does not have a sequence-of-tense (henceforth SOT) construal. In the complement clause we find the same verbal form[4] that appears in the main clause (cf. form 8 on p.1). In SOT-languages like English, the morpholgical shape of the verb is altered in such contexts. An examination of the behaviour of tenses in embedded contexts in general may shed light on this situation.

1.1. SOT effects in embedded contexts.

1.1.1. Past under past

(3) a. Samba dɛ beda na a dɛ dʒun le
samba past say-perf. that he past eat-imperf eat it
Samba said that he was eating it
b. Samba dɛ beda na a dɛ bɛ ŋageben
samba past say-perf. that he past be happy
"Samba said that he was happy"

In (3)a we have the imperfective distant past of an eventive predicate; in (3)b we have the past of a stative predicate. For both sentences, the backshifted[5] and, crucially, the *simultaneous*[6] readings are both available. The latter fact tells us that the morphological pasts in the embedded clauses are not real semantic pasts. Hence, we have well-behaved SOT. In terms of Stowell (1993) theory of tense, the data above are enough to conclude that the morpheme dɛ is a past-polarity item licensed by a higher syntactic predicate (AFTER, hosted in the head T of the tense projection) with dɛ inserted in the head Z of the time denoting ZP arguments of T.

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might suggest that Naudm has only one tense projection unspecified for the ordering predicate, as in Stowell (1993).

[4] We will try to use this neutral expression in those cases (like this) in which using the term "tense" might be understood as committment to a certain analysis that, at least at this time, we do not want to make.

[5] Embedded clause situation before matrix clause situation.

[6] Embedded clause situation overlapping with matrix clause situation.

1.1.2. Present under past

Here we have to distinguish various subcases:

a) stative predicates:

(4) Samba dɛ beda na fiːna bɛn foːga
samba past say-perf. that fina has pregnancy
"Samba said that Fina is pregnant"

This sentence *can* be used in a situation in which Fina is pregnant at utterance time *and* at the time of Samba's utterance, and the pregnancy is the same. That is, the predicate holds for the timespan that includes the two boundaries just mentioned. Hence, we have a *double access* reading.

b) eventive predicates:

(5) Samba dɛ beda na a ʤun deete
samba past say-perf that he eat-imperf. food
Samba said that he eats/is eating food

Here we have to recall that the present (properly, the bare imperfective) can have both an habitual and a progressive construal. Let us consider the two cases in turn:
i) habitual construal. The sentence means that Samba has the habit of eating food at utterance time *and* and at matrix clause situation time, and the habit holds for the period in between. Hence, we have a double access reading again.
ii) progressive construal. The sentence means that the eating event is in progress at the time of Samba's utterance, but, crucially, it is not compatible with the eating event being in progress at utterance time. Hence, here we have a non-SOT construal. Specifically, a present in embedded clause with progressive reading is interpreted in the same way (i.e. as expressing simultaneity) as it is interpreted in main clauses. The double access reading, which is the only way in which a present under past can be interpreted in SOT-languages like English, is not forced in Naudm..

1.1.3. Present under future

In this case the patterns are exactly as with the present under past.

(6) Samba baː bere na fiːna bɛn foːga
samba future say that fina has pregnancy
"Samba will say that Fina is pregnant"

(7) Samba baː bere na a ʤun deete
samba future say that he eat-imperf. food
Samba will say that he eats/is eating food

With stative predicates as in (6) we get a double access reading. With eventive predicates as in (7) we have to distinguish between a habitual construal and a progressive construal. The habitual construal should yield a double acces reading; the progressive construal should yield a non-SOT construal (as in (5)).

There would be nothing special about this last pattern, given that it is exactly the same as the one with the present under a past, if it were not for the fact the Naudm data subtly contrast with their English counterparts. In English a present under a future does not have to trigger a double access reading. A sentence like *John will say that Mary is upset*
a) is compatible with a situation in which Mary is upset at the future time only;
b) does not require the she be at utterance time as well for the sentence to be true;
c) it is neverthelss possible that Mary is upset at utterance time.

These facts are taken e.g. by Enç (1996) to show that English *will* is not a proper tense. In "present under future" construals, the present does not have to be linked to utterance time as it is forced to be when embedded under a past, i.e. under a real tense.

The corresponding Naudm facts seem to point in the opposite direction. If a double access reading is not available, the present can only be interpreted as simultaneous with the future of the matrix clause. Simultaneity with utterance time is not possible (unlike English, cf. point c above).

While in English the non-obligatoriness of the double access reading[7] suggest that *will* is not a real future. In Naudm, the obligatoriness of the simultaneous construal (when the double access reading associated with stativity/habituality is excluded) along with "present under past" construals suggest that ba: is, in some sense, a "real" future.

We have seen that Naudm exhibits both SOT and non-SOT effects in embedded contexts. In particular, non-SOT effects cluster together the future and the imperfective.

1.2. The negation facts.

So far we have collected problems rather than providing solutions. We will add a last paradigm before making some steps towards an analysis. Consider the negative counterparts of the forms we presented at the beginning.

Table 2:

Positive:		Negative:	
ma dʒun	I am eating	ma kə dʒu	I am not eating
ma deera	I have eaten	ma be de	I have not eaten
ma dɛ deera	I ate	ma dɛ be de	I did not eat

[7] In Stowell's terms, the present in not "forced" to scope out at LF.

ma n deera	I ate	ma n be de	I did not eat
ma dɛ dʒun	I was eating	ma kə dʒu	I was not eating
ma n da: dʒu	I was eating	ma n da: kekə dʒu	I was not eating
ma da dʒu	I used to eat	ma da: kekə dʒu	I did not use to eat
ma ba: de	I will eat	ma te de	I will not eat

The descriptive generalization here is that the distribution of negation morphemes covaries with aspect. In forming a negative sentence, the overt aspectual morphology of the positive form disappears, but the choice of the negative particle depends on the positive aspectual form. The following template characterizes these generalizations.

Tense + (Negation & Aspect) + Verbal Stem

In particular perfective aspect corresponds to the particle bɛ, imperfective aspect corresponds to the particle kə. For tenses which already display the bare imperfective stem[8], the negative particle is kəkə. Interestingly the future here patterns with the aspectual morphology. The morpheme ba: covaries with the negative particle te. We take these distributional facts at face value to suggest that the morpheme so far identified as future has in an apparent sense "something to do" with aspect.

1.3. Summary so far.

Here is a summary of things to be accounted for:
a) the future-in-the-past (dɛ ba: form) is the only deictic-anaphoric tense, thus the only form suggesting that Naudm has (can have) two distinct tense projections;
b) in embedded contexts we have both SOT and non-SOT effects. Before accepting the idea that a language can display a non-uniform behaviour wrt SOT, we would like to try some reduction to independent properties or principles;
c) both the negation facts and the SOT facts suggest a correlation of the future with the aspectual domain. (As for the latter, recall we observed that non-SOT effects are shared by the future and the progressive construal of the imperfective).

2. First shot at the phrase structure of tense and aspect.

2.1. A proposal.

The proposal we want to make exploits the features of Stowell's polarity-based theory of tense. We will not review here the whole theory, but we want to recall an aspect which is relevant for what we are going to say.

Stowell's theory factors out tense in two components. Specifically, there is a dyadic predicate (TENSE) of temporal ordering (instantiated by the head T of a functional projection) taking two time-denoting arguments ZP and there is proper tense morphology

[8] Characterized by the lack of final -n on the verb.

(*tense*) instantiated by the head Z of the ZP complement of T. The key idea is that *tense* morphology is a polarity item (much like proper NPIs) licensed by a proper c-commanding TENSE predicate.

Among other reasons, this split is needed in order to account for the fact that in SOT-languages like English a given tense morphology does not always have the same meaning. Namely, an embedded past (of a stative predicate) under a main clause past expresses simultaneity. That is, it is interpreted as if it were a present.

In this framework, languages that lack SOT such as Russian or Japanese can be properly characterized by assuming that there is no factorization of TENSE and *tense* into distinct syntactic positions. Instead, *tense* morphology is inserted directly into the head T. This allows the same ordering predicate TENSE independently of the syntactic context. For brevity, let us call tenses like these *absolute tenses.*

We need now a last piece to complete the picture. Demirdache & Uribe-Etxebarria (1998) extend Stowell's framework to aspect. Their core proposal is that both tense and aspect are, syntactically, dyadic predicates expressing the same types of ordering relations (inclusion, subsequence, precedence) between their time-denoting phrases as arguments. Just like in Stowell's theory an head T is an ordering predicate with the meaning of:

AFTER (past) BEFORE (future) (WITH)IN (present)

In Demirdache & Uribe-Extebarria's theory, a head Asp is an ordering predicate with the meanings of:

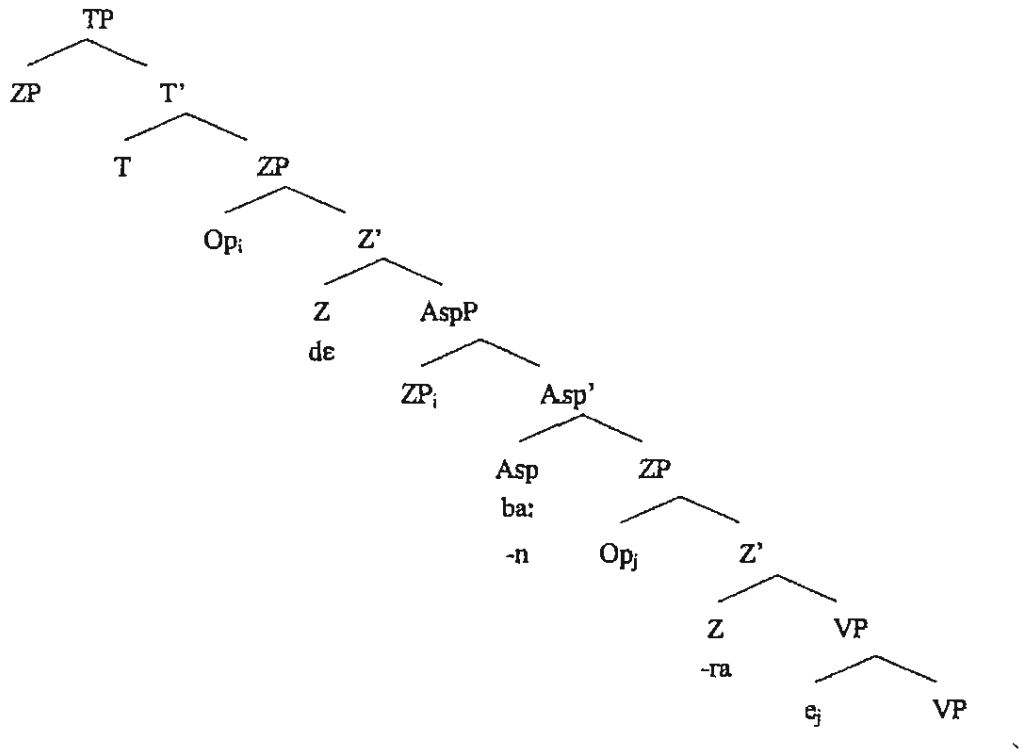
AFTER (perfect asp.) BEFORE (prospective aspect) (WITH)IN (progressive aspect)

If aspectual heads are dyadic predicates taking time-denoting ZP arguments, we can replicate the logic of factorization and polarity within the aspectual domain. That is, we will have ASPECT predicates (whose value of course has to be one of the three above) hosted in the head Asp and *aspect* morphology hosted by the head Z of the ZP complement of Asp. With this background in mind, we can account for the data seen above if we assume that future ba: and imperfective n are *absolute aspects* . Specifically, we will assume that they behave like absolute tenses in non-SOT languages. The idea is they are not polarity items requiring higher syntactic predicates to be licensed. They are inserted into the head position of an aspectual projection (AspP) together with the relevant predicate. Therefore, they always instantiate the same ordering relation.

In this way we do not need to assume a dedicated tense projection for the future. We can derive the interpretation of the future-in-the-past as the only Naudm tense instantiating two temporal relations by means of the BEFORE predicate that the ba: morpheme activates when inserted into the head of the aspectual projection[9].

[9] We might say that ba: comes to express what is sometimes called *prospective aspect.*

A quite partial and approximative representation of what the clause structure would look like is the following:



2. Refinements of the clause structure.

2.0. Claims to be made.

The discussion in the previous section was meant to introduce some basic issues on tense and aspect, showing how the Naudm data can square with the logic of polarity and the idea that aspectual phrases express ordering predicates. In this section we will delve in greater detail into the clause structure of Naudm, crucially relying on word-order tests targeting the syntactic positions of adverbs and negations. We will adopt the architecture of functional projections proposed by Cinque (1997):

Under the assumption that such architecture is universal, the working hypotheis will be that the Naudm clause structure is consistent with it, and our task will be to show how. We are going to claim that the clause structure of Naudm includes at least the following functional projections, in this order:

[*once* T(Past) [*usually* Asp$_{\text{habitual}}$ [*again* Asp$_{\text{repetitive(I)}}$ [*still* Asp$_{\text{continuative}}$
[*characteristically(?)* Asp$_{\text{generic/progressive}}$ [*almost* Asp$_{\text{prospective}}$ [*completely* Asp$_{\text{SgCompletive}}$

For ease of exposition we are going to state now the major claims that we argue can account for the Naudm data. Specific pieces of data might support under several respects this overall picture.

a) the unique tense projection T(Past) and *some* aspectual projection have a complex predicative structure, as in the theories of Stowell (1993) and Demirdache & Uribe-Etxebarria (1998):

i) T or Asp instantiates an ordering predicate which takes in either cases time denoting ZP arguments. T relates reference time (the ZP in SpecTP) and focalization time (the ZP complement of T). Asp relates focalization time[10] (the ZP in SpecAspP) and event time (the ZP complement of Asp);

ii) an operator (whose choice depends on the tense morphology located in the head Z) in the spec of the ZP complement of T binds the ZP in specAsp, ensuring identification. An operator (whose choice depends on the aspectual morphology located in the head Z) in the spec of the ZP complement of Asp binds the event variable inside VP.

iii) the aspectual projections with predicative structure (henceforth *predicative aspects)* are $Asp_{habitual}$, $Asp_{generic/progressive}$, $Asp_{prospective}$, $Asp_{completive}$.

b) the uniform ordering predicates for tense and aspect are the following:

BEFORE	→	focalization time before event time: event not yet started	aspect
	→	reference time before focalization time	tense
WITH(IN)	→	focalization time is within event time: event in progress	aspect
	→	reference time within focalization time	tense
AFTER	→	focalization time after event time: event completed	aspect
	→	reference time after focalization time	tense

c) tense/aspect morphemes are of two types: polar and absolute.
Polar morphemes are syntactically argument heads (Z heads):

for tense:

dɛ	is a past polarity item
da:	is a past polarity item

for aspect:

perfective morphology:	is a past polarity item

Absolute morphemes are syntactically predicate heads (Asp heads)

future:	ba:	always instantiates BEFORE
imperfective morphology:	-n	a) progressive: always instantiates WITHIN b) habitual: is an anti-tense polarity item

[10] The notion of focalization time captures the idea that (grammatical) aspect pertains to the characterization of the internal temporal contour of the situation described by the verb: one can imagine to look at the situation from a perspective point (i.e the focalization time) that follows it (completive aspect), that is included in it (progressive aspect), or that precedes it (prospective aspect). Demirdache & Uribe-Etxebarria's strategy consists in achieving uniformity by "temporalizing" aspect.

d) all and only modal and predicative aspect projections are in complementary distribution wrt negation. The negative morpheme is inserted in the same syntactic position as the modal head and the polar or absolute aspect.

2.1. The past tenses and the habitual aspect.

Here we would like to refine the characterization of past tenses. Descriptively, at the very beginning we distinguished between distant and recent past, whose markers would be dɛ and n, respectively. But upon closer observation this does not seem quite right. The relevant difference seems rather to be sensitive to indexicality. Data that we will not discuss here suggest that n should be best understood as a marker for utterance time (either proper or *reported*). Specifically, it needs not in fact be associated with any proper semantic contribution to tense interpretation is further confirmed by a comparison with tenses.

We will see more in detail later (section 2.2.2.) that the bare perfective has a past interpretation since the perfective morphology is past-polarity item and thus can induce an AFTER predicate in a higher position. So for the recent perfective past (e.g., *a n deera*), we might say that the past meaning comes from the perfective morphology and the n morpheme just gives the indexical specification. This situation yields the result whereby the form at stake can only refer to past situations within the indexical domain of the day including utterance time.

Consider now the habitual past *a da: dʒu* (form 6 on p.1). This form can be used only for habits that held in the past, but hold no more in the present, i.e. semantically it is a solid past. Such past meaning cannot come from the imperfective stem. Therefore, unless we want to posit an empty past morpheme, the most natural candidate for the contribution of the past meaning is the morpheme da:. Consider the following:

(11) samba dɛ beda na a da: dʒu deete
samba past say-perf that he past eat-imperf. food
"Samba said that he used to eat food"

Since the simultaneous construal is possible (the habit of eating holds at the time of Samba's utterance), we conclude, as we did for dɛ, that da: is a past-polarity item. It seems natural to state the difference between dɛ and da: in terms of definiteness. While dɛ points to a specific reference time, the da: past is indefinite, thus yielding the habitual interpretation (other things being equal).

Notice then that both da: and dɛ are past-polarity items, i.e. they are both inserted in a Z head position so that they are both licensed by a higher AFTER predicate in the head of the relevant predicative projection. The difference is that dɛ is inserted in the Z head of the ZP complement of the tense projection, and therefore it instantiates proper past tense morphology. On the other hand the framework adopted allows us to capture the hybrid

nature of the habitual aspect that the morpheme da: expresses. While licensed by a higher order predicate as a past-polarity item, it can still be inserted in the Z head of the ZP complement of $Asp_{habitual}$ (and not of T(Past) like dɛ). It can thus give a proper habitual interpretation through interplay with other properties of that syntactic position (see below).

Consider now what we called the recent imperfective past: *ma n da: dʒu:* Here we might say that the past meaning comes from the morpheme da: and the n morpheme gives again the indexical specification. That is, the n morpheme bounds the scope of an indefinite past to the domain of the day including utterance time and yields quite naturally the progressive interpretation that such a tense has. This is the only reading that such a form has, given that habituality restricted to a single day domain would be semantically inconsistent. Therefore, in this case, indexical specification amounts to a sort of existential closure over the set of times the indefinite past ranges over.

As for the syntactic position of da:, we can assume that it is inserted in the Z head of the ZP complement of the $Asp_{habitual}$ head. As a past-polarity item it is licensed by an AFTER predicate in the head of the tense projection. A default generic operator GEN in the specifier of the head hosting da: yields the quantificational interpretation of the habitual. In this case nothing seems to prevent us from assuming that the n morpheme can be hosted in the ZP in $SpecAsp_{habitual}$, given the following paradigm:

(13) a. a n da: tɛ dʒu
he indexical past again eat-imperf
"He was eating again"

b. *a n tɛ da: dʒu
he indexical again past eat-imperf
"He was eating again"

c. *a tɛ n da: dʒu
he again indexical past eat-imperf
"He was eating again"

(14) a. a n da: ɲi dʒu
he indexical past still eat-imperf
"He was still eating"

b. *a n ɲi da: dʒu
he indexical still past eat-imperf
"He was still eating"

c. *a ɲi n da: dʒu
he still indexical past eat-imperf
"He was still eating"

(15) a. a da: tɛ dʒu
he past again eat-imperf
"He used to eat again"

b. *a tɛ da: dʒu
he again past eat-imperf
"He used to eat again"

(16) a. a da: ɲi dʒu
he past still eat-imperf
"He still used to eat"

b. *a ɲi da: dʒu
he still past eat-imperf
"He still used to eat"

The data above show that a) the $Asp_{habitual}$ projection where da: gets inserted is higher than $Asp_{repetitive}$ and $Asp_{continuative}$, consistent with Cinque's hierarchy; b) it is possible to locate the n morpheme in the ZP in $SpecAsp_{habitual}$. The presence of the n morpheme in this position can yield the progressive interpretation via coindexation with an existential quantifier over events located in the same SpecZP that hosts the generic operator.

On the other hand the same data confirm that the da: morpheme has to be located in the $Asp_{habitual}$ position and not in $Asp_{generic/progressive}$, which in principle would be available, given that da: appears exactly in tenses that have either a progressive or an habitual, i.e. possibly generic interpretation. The fact that both for the recent progressive past (sentences (13) and (14)) and for the habitual past (sentences (15) and (16)) the morpheme da: has to appear above the adverbs tɛ and ɲi, which are located in the specifier of $Asp_{repetitive}$ and $Asp_{continuative}$ respectively, suggests that da: is really always inserted in the (Z head of the complement of the) $Asp_{habitual}$ position, and that the progressive interpretation must be achieved via a mechanism combining the indexical contribution of the n morpheme with existential closure.

2.2. Predications.

Let us turn now to the core predicative aspects, starting from what Cinque labels $Asp_{generic/progressive}$. The claim is that this is the place where the imperfective morphology gets attached when the verb raises to this position. The evidence from SOT in embedded contexts presented in the first part of this paper suggested that the n morpheme which expresses imperfective morphology should be treated as an absolute aspect. It is now time to revise those initial tackles on the issue.

In that first section we just suggested that absolute aspects would be inserted in the head Asp of a predicative aspectual projection. Adopting Cinque's framework to the predicative perspective on aspect of Demirdache & Uribe-Etxebarria, we simply have to say that each distinct aspectual projection offers two different possible landing sites for each type of aspectual morphology. The head Asp itself is the landing site if the morpheme is absolute; the head Z of its ZP complement is the landing site if the morpheme is polar.

It seems quite natural to assign a predicative structure only to those aspectual projections which by virtue of their inherent meaning come close to express a temporal relation. As anticipated in a footnote above, the strategy of "temporalizing" aspect amounts to reduce aspects to an ordering predicate relating the time of the situation to the time of the perspective point from which we look at the situation. In this sense the following aspects of Cinque's hierarchy are interpreted as carrying respectively the following ordering predicates (when activated by overt morphology):

$Asp_{generic/progressive}$	WITHIN
$Asp_{prospective}$	BEFORE
$Asp_{completive}$	AFTER

Notice that embedding a Stowell-like theory of tense and aspect inside Cinque's framework has in general the consequence that each predicative head can carry only the ordering predicate that its syntactic position in the clausal hierarchy allows.

It is now time to refine the characterization of the n morpheme expressing imperfective morphology as absolute morpheme, based on the SOT-effects in embedded contexts discussed in the first part of this paper. Recall that the generalization was the following: for eventive predicates, a present imperfective embedded under a past (or future) yields a double access reading in the habitual construal and a simultaneous reading only (i.e. a non-SOT effect) in the progressive construal.

The predicative approach to aspect combined with the logic of polarity offers us an elegant way to provide an account of these facts through the syntactic representation, in the following way:
a) when the n morpheme expresses progressive aspect it is an absolute morpheme inserted into the head $Asp_{generic/progressive}$;
b) when the n morpheme expresses habitual aspect it is anti-tense polarity item inserted into the head Z of the ZP complement of $Asp_{generic/progressive}$.

The first point gives us the fact the progressive construal can only have the simultaneous construal. Because the n is not a polar morpheme, it does not have reason to scope out of domain of the higher AFTER predicate and thus be interpreted directly wrt utterance time. The second point gives us the double access reading, if we allow for anti-tense polarity, as we did for the purely habitual morpheme kə.

Let us move on to the next predicative aspect, the position $Asp_{prospective}$. In the first part of the paper we suggested that the morpheme ba: should be considered an aspect. In

[11] Notice that allowing for anti-tense polarity makes explicit the assumption that polarity-driven movement is clausal: the fact that the distant imperfective past *ma de dʒun* can have also the habitual interpretation (besides the progressive one) suggests that in this case the anti-tense polarity requirement of the imperfective morphology stays unsatisified, just because pied-piping of a constituent smaller than the clause is not possible.

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Cinque's hierachy, it cannot be anything but prospective aspect. This claim was based on two empirical observations:
a) in Naudm only aspect and, crucially, not tense covaries with negation in the way we have seen;
b) the only other morpheme of absolute type (as ba: has to be, because of the SOT facts) is the imperfective n with progressive construal.

Here we will give further arguments to support this view. Consider the following:

(22) samba n da: ba?a na a n da ba: de le
samba indexical past say-imperf that he indexical past future eat it
"Samba was saying that he would eat it"

(23) *samba ba: n da: ʤu deete
samba future indexical past eat food.

We have established above that the position where da: gets inserted is the $Asp_{habitual}$ projection. Following Cinque's hierarchy, the only available syntactic position (in terms of semantic compatibility) for ba: below $Asp_{habitual}$ is exactly $Asp_{prospective}$. Crucially, the order ba: > n da: or even ba: > da:, which might rather support the view that ba: can be also a real future tense (since T(Future) is higher than $Asp_{habitual}$), is apparently never possible, neither in main clause nor in embedded contexts.[12]

The last predicative aspect is $Asp_{completive}$. This will be the place where perfective morphology is inserted. Under the perspective adopted here we have to treat the perfective morphology as a proper past-polarity item. This is due to the fact the distant perfective past (form 3 on p.1) is a purely deictic and not an anaphoric-deictic tense (i.e. it is like the English simple past and not like the past perfect). The argument is the following:

a) from the fact that a past of a stative predicate embedded under a matrix clause past (cf 1.2.1.) can have the simultaneous construal we infer that dɛ is a past-polarity item requiring an AFTER predicate in the head of T in order to be licensed;

b) if the perfective morphology were as absolute aspect, it would be inserted in the head of an aspectual projection together with a further AFTER predicate, thus instantiating two distinct temporal relations which would yield the semantics of a past perfect This, however, is not what we get in Naudm. Therefore we have to conclude that the perfective morphology is inserted in the head of the ZP complement of the aspectual head, i.e. in the syntactic position of polarity-items.

[12] Notice moreover that in (22) the embedded clause tense is a variety of future-in-the-past, i.e. the da: morpheme is not interpreted as a real past, thus providing further support for the claim that da: is a past-polarity item.

c) the simple perfective *a deera* can have (under somewhat restricted conditions) a proper past interpretation and, more crucially, in matrix clause it is able to license a simultaneous construal for the dɛ past of a stative predicate:

(26) Samba beda na a dɛ bɛ ɲageben
samba say-perf. that he past be happy
"Samba has said that he was happy"

If the dɛ past morpheme is a past polarity item as the data in (3) suggest and here it is interpreted with the simultaneous construal, the AFTER predicate that licenses dɛ has to be present higher up in the structure. Here the only two possibilities are either the Asp head right above the Z head where the perfective morphology is inserted or the tense predicate itself: in both cases the perfective morphology works like a past-polarity item licensed by such higher predicate.

3. Conclusions.

In this paper we have shown how the seemingly puzzling data from Naudm can be accounted for once a polarity-based theory of tense and aspect is embedded within the universal clausal architecture proposed by Cinque (1997), a relatively natural move from the perspective of UG.

References

Cinque, Guglielmo. 1997. Adverbs and Functional Heads. Ms., University of Venice.

Demirdache, Hamida, and Myriam Uribe-Etxebarria. 1998. The Syntax of Temporal Relations: a Uniform Approach to Tense and Aspect. To appear in WCCFL 16.

Enç, Murvet. 1996. Tense and Modality. In *The Handbook of Contemporary Semantic Theory*, ed. Sahlom Lappin. Oxford: Blackwell.

Stowell, Tim. 1993. Syntax of Tense. Ms., UCLA.

Szalai, Temese. 1998. Negation in Naudm. Ms., UCLA.

Vegnaduzzo, Stefano. 1998. A Functional Architecture for Naudm Tense and Aspect. Ms., UCLA.

Stefano Vegnaduzzo: svegnadu@ucla.edu
Temese Szalai: tszalai@ucla.edu
UCLA Department of Linguistics
Box 951543
Los Angeles, CA, 90095-1543